Breast cancer screening in high-risk women

A Consensus Statement for KP Health Care Providers from the National Breast Cancer Clinical Lead Team
November 20, 2012

Issue:

- New harms data suggest an additional increased risk of breast cancer in BRCA 1 or 2 mutation carriers exposed to ionizing radiation before age 30 years.

Overview:

- GENE-RAD-RISK is a multinational retrospective cohort of 1993 female carriers with BRCA 1 or 2 mutation, from France, UK and the Netherlands**.
- Any exposure to ionizing radiation before the age of 30 years was associated with an increased risk of breast cancer (Hazard Ratio (HR) 1.90, 95% Confidence Interval (CI) 1.20 to 3.00).
- A history of mammography before age 30 was also associated with an increased risk of breast cancer (HR 1.43, 95% CI 0.85 to 2.40).
- There was no association between ionizing radiation and breast cancer when initiated at ages 30 to 39 years.
- Two additional retrospective cohorts (Andrieu 2006, Goldfrank 2006) show similar trends, especially for BRCA1 mutation.
- Study Limitations:
  - High risk of bias attributed to recall bias due to ascertainment of exposure through self-report

Kaiser Permanente National Breast Cancer Guideline Recommendations:

The national breast cancer Clinical Lead Team concludes evidence suggests an increased risk of breast cancer in women with BRCA 1 or 2 mutations when exposed to ionizing radiation before age 30 years, and recommends the 2012 Kaiser Permanente National Breast Cancer Guideline addressing mammography screening in high-risk women be amended as follows:

For women with BRCA 1 or 2 mutations:

1. Breast cancer screening with mammography should not be initiated earlier than age 30 years.
2. For women under age 30 years, screening with modalities that don't involve non-ionizing radiation is an option (e.g. ultrasound, MRI).

This statement reflects the consensus of the National Breast Cancer Clinical Lead Team and is based on review of evidence from published studies, clinical experience, and discussion with other national experts.

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* High-risk: personal history of breast cancer (including ductal carcinoma in situ); breast biopsy showing atypical hyperplasia or lobular neoplasia (lobular carcinoma in situ); first-degree relative diagnosed with breast cancer; women who have been tested and found to have a clinically significant alteration in a BRCA gene associated with increased risk for the development of breast cancer, or who have a first-degree relative (parent, sibling, or child) who has been tested and found to have such an alteration, or a first or second degree relative (aunt, uncle, grandparent, niece, nephew, or half sibling) with early-onset (diagnosis before age 50) breast cancer and/or ovarian cancer (at any age); prior chest radiation therapy.